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MEMORANDUM

TO: Regional Managers, Industrial Abatement and Technical Support

FROM: S.N. Linzon, Supervisor
Phytotoxicology Section
Air Resources Branch

SUBJECT: Phytotoxicology Excessive Levels for Contaminants in Soil and Vegetation - 1978

Phytotoxicology excessive levels have been established for 19 elements for 1978 and these are shown in the attached table. These levels of contaminants are considered to be excessive, as compared to average levels of the elements which might be found under a variety of situations not associated with industrial sources. "Excessive" does not necessarily mean toxic, but is evidence of contamination above average normal levels and thus would indicate that a particular source may be contributory. The excessive levels have been established as a result of several years of surveys for the concentrations of contaminants which may be found in rural, urban, or industrial settings. Staff of both the Phytotoxicology Section and the Regions periodically review the levels considered to be excessive, and revisions are made accordingly.

The excessive levels of contaminants in vegetation or soil are considered guidelines or tools for use by phytotoxicology investigators in interpreting the results of chemical analyses. Certain limitations exist with these levels, and phytotoxicology investigators must judge their use in supplementing other results and observations obtained during the conduct of assessment surveys in the vicinity of industries and in the investigations of complaints from the public.

. . .continued/

Because certain elements are natural components of plant life, and their concentrations may vary widely depending on plant species, they have been omitted from the table of excessive levels. Also, since certain elements exist in soil in large concentrations which can fluctuate considerably they have been omitted from the table.

In conclusion, the Phytotoxicology excessive levels for contaminants can be useful tools provided their limitations are understood. As such their best use is not as a single diagnostic tool, but to complement other information obtained through a thorough field investigation.

S. N. Linzon
S.N. LINZON, Ph.D.

SNL:lib

Attach.

cc: W.B. Drowley
A.J. Harris
T.W. Cross
ARB Supervisors
Phytotoxicology Staff
Regional Associates

PHYTOTOXICOLOGY EXCESSIVE LEVELS FOR CONTAMINANTS - 1978

Contaminant	Concentration Considered Excessive (ppm, dry weight)	
	Vegetation (not washed foliage)	Surface Soil (0-5 cm)
Aluminum	400	-
Arsenic	8	25
Boron	200	-
Cadmium	5	8
Chromium	20	75
Cobalt	10	25
Copper	30	100
Fluorine	35	-
Iron	800	-
Lead	100 (50 rural)	600 (200 rural)
Manganese	500	1500
Mercury	0.1	0.3
Molybdenum	8	2
Nickel	30	100
Selenium	3	5
Silver	2	2
Sodium	600	-
Vanadium	10	60
Zinc	250	400